

What is claimed is:

1. A submarine mast simulator comprising:

a tow body suitable for towing, said tow body including a nose and a tail;

a mast including a rigid lower mast section mechanically attached to said tow body and an upper mast section extendable from said lower mast section; and

a motor with controller in mechanical connection with said mast for initiating the extension of said mast from said tow body.

2. The submarine mast simulator in accordance with claim 1 further comprising a pressure sensor in connection with said tow body, wherein said controller initiates the extension of said mast in response to a depth indication by said pressure sensor.

3. The submarine mast simulator in accordance with claim 2 wherein said tow body further includes a gas source fluidly connected to said upper mast section, said gas source supplying a gas to inflate said upper mast section thereby extending said upper mast section.

4. The submarine mast simulator in accordance with claim 3 wherein said tow body is indented to define a recessed area for housing said mast in a nonextended state.
5. The submarine mast simulator in accordance with claim 4 wherein said tow body further includes a plurality of stabilizer fins extending from said tail.
6. The submarine mast simulator in accordance with claim 5 wherein said tow body further includes actuators to control the direction of said stabilizer fins.
7. The submarine mast simulator in accordance with claim 6 wherein said mast further includes a radar-reflective coating on an outer surface thereof.
8. The submarine mast simulator in accordance with claim 7 further comprising harness attachments positioned equidistant from said nose to maximize a positive angle to a water surface during maneuvering in a towing operation.
9. The submarine mast simulator in accordance with claim 8 wherein said harness attachments are positioned between said nose and a longitudinal midpoint of said tow body.

10. The submarine mast simulator in accordance with claim 9 further comprising a flexible antenna positioned on an outer surface of said upper mast section.

11. The submarine mast simulator in accordance with claim 10 wherein said gas source of said tow body is an air pressurization system comprising a first solenoid valve controlling air flow to an air pump; and a second solenoid valve controlling air flow from said air pump for the inflation of said upper mast section.

12. The submarine mast simulator in accordance with claim 11 wherein said air pressurization system further includes a relief valve to maintain a predetermined pressure in said upper mast section.

13. The submarine mast simulator in accordance with claim 12 wherein said tow body further includes a hot gas emission system comprising a fuel bladder fluidly connected to a fuel pump supplying a combustor fluidly connected for supply by said air pressurization system, said combustor producing the hot gas emission exhaustable to the atmosphere out of said tow body.

14. An assembly for simulating a submarine mast for detection by an outside entity, said assembly comprising:

a housing;

a mast section partially encompassed by said housing; and

means for extending said mast from said housing to a detectionable position.

15. The assembly in accordance with claim 14 further comprising:

attachment means for allowing said assembly to be towed.

16. The assembly in accordance with claim 15 further comprising:

means for altering the buoyancy of said assembly during towing.

17. The assembly in accordance with claim 16 further comprising:

sensing means for depth indication wherein said extension means are activated based upon said depth indication.

18. The assembly in accordance with claim 17 further comprising:

means for radar-reflection.

19. The assembly in accordance with claim 18 further comprising:

means for infrared emissions detectable by the outside entity.

20. The assembly in accordance with claim 19 further comprising:

means for radio-frequency communications.